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| APPLICATION NO | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO |
|---|---|---|---|---|
| 09/527,892 | 03/20/2000 | Mark J. Schermer | 109.629.111 | 4383 |

7590 06/04/2004

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| EXAMINER | |
|---|---|
| HANDY, DWAYNE K | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1743 | |

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/527,892 | SCHERMER ET AL. | |
| | Examiner | Art Unit | |
| | Dwayne K Handy | 1743 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1 136(a) In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U S C § 133) Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment See 37 CFR 1.704(b)

**Status**

1)☒ Responsive to communication(s) filed on *26 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-24 and 48-53* is/are allowed.

6)☒ Claim(s) *25-27,29,31-33,36,37,40 and 43-47* is/are rejected.

7)☒ Claim(s) *28,30,34,35,38,39,41 and 42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other. _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 25, 31, 32, 40 and 44-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Kureshy et al. (5,141,871). Kureshy et al. teach a fluid dispensing system that includes an optical detection system for locating a pipette on a downward path when dispensing. The optical detection system is best shown in Figure 2 and described in column 4, lines 13-58. In short, the optical detection system (108) is comprised of a source of light (110) that produces a light beam (114) that is detected by a detector (112) connected to a microprocessor (62). In operation, the full strength of the light beam (114) is incident upon the detector (112) in the absence of the pipette (40). When the pipette (40) descends, the light beam is interrupted and the intensity of the beam (114) received at the detector (112) is greatly reduced. This reduction of light intensity signifies that the tip of the pipette is at the location of the light beam – thus locating the tip of the dispenser.

3. Claims 25 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Verlinden et al. (6,131,512). Verlinden teaches a printing master comprised of a printing master and a base (33). The base is mated with the printing master when the printing master is used. The base is properly oriented to the master through the use of strain gauges which touch the master to ensure that the two pieces of the printer align (column 3, line 60 - column 4, line 17). The strain gauge includes pins which are part of the base plate. The strain gauges are then monitored (column 5) to ensure that the two pieces of the plate are oriented properly during use of the printer. In using the strain gauges of the device to determine the orientation of the printing device, one would also have to detect the pin location.

4. Claims 25-27, 29, 31, 32, 36, 37 and 44-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Inder et al. (6,212,949). Inder teaches a fluid level sensor and a washer unit. The washer head (13) is vertically movable by a drive (2) above a reaction tray (8) having fluid (15) in separate cells. The level sensor is comprised of two electrodes arranged along a fluid path within the aspirator tips (6). The electrodes are held at different potentials and are effectively insulated from each other. If fluid is aspirated along the fluid path, then the electrodes are bridged. The electrodes, then, sense fluid in the tips of the washer head by a change in conductance. This indicates that fluid has been obtained and therefore must mean that the tips are in the fluid - which gives the location of the tips. Inder describes the washer head in detail in

column 2 and includes the use of circuit boards for providing the electrical connections and components (column 3, lines 1-50). Inder cites the use of capacitance or impedance in column 5, lines 42-45.

***Response to Arguments***

5. Although applicant has not submitted arguments with the submission of the RCE and IDS, the Examiner wishes to take a few moments to summarize the rejections made above in advance of applicant's next response. In claim 25 applicant has broadly claimed a pin detecting apparatus comprised of at least one sensor element to automatically detect whether a fluid dispensing pin is present in a pin location. In addition, applicant has not claimed the microarray printing instrument itself – only the detection apparatus. This was also noted by applicant on page 12 of arguments submitted on October 21, 2003. Based on these facts, the Examiner believes that he is correct in now rejecting the claims in view of the references "Kureshy", "Verlinden", and "Inder". In each case, the reference provides an apparatus that has a device for registering (or locating) pins or pipette elements. Kureshy locates the dispensing tips through an optical sensor. Verlinden accounts for the location of the pins using a strain gage sensor. Finally, Inder locates the tips of a dispenser through the use of an electrical contact in conjunction with the fluid in the cells. Therefore, in summary, since applicant is only claiming *the sensor for locating a given pin and* ***not the printhead or pins*** *of the spotting instrument*, the Examiner believes these references supply this feature. Each reference has a sensor that determines whether or not a pin or tip is

present at a given location. This is what the instant claim requires. As to the limitations of claims 31, 32, and 44-46, the Examiner believes that the references cited in the rejection of each of these claims could be used to detect any portion of pins as well as any shape of pins contained in a printhead.

### *Allowable Subject Matter*

6. Claims 1-24 and 48-53 are allowed. These claims were allowed in the previous Office Action mailed December 16, 2003 and remain allowed.

Claims 28, 30, 34, 35, 38, 39, 41 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne K Handy whose telephone number is (571)-272-1259. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKH
June 1, 2004

Jill Warden
Supervisory Patent Examiner
Technology Center 1700